

CLAIMS

1. A laminated golf club head face comprising:
a front face attachable to a golf club head body; and
a back face welded to the front face.
2. A laminated golf club head face in accordance with claim 1, wherein the back face is welded to the front face along the periphery of the back face.
3. A laminated golf club head face in accordance with claim 1, wherein the back face comprises a plurality of ridges extending away from the front face.
4. A laminated golf club head face in accordance with claim 1, wherein the back face is smaller than the front face.
5. A laminated golf club head face in accordance with claim 1, wherein the back face contacts the front face only along a periphery of the back face.
6. A laminated golf club head face in accordance with claim 5, wherein a center of the back face is separated from the front face by a distance between one to three millimeters.
7. A laminated golf club head face in accordance with claim 6, wherein the distance is approximately 2 millimeters.
8. A laminated golf club head face in accordance with claim 5, wherein the back face is sealed to the front face around the periphery of the back face and a sealed region between front face and the back face contains a gas.
9. A laminated golf club head face in accordance with claim 1, wherein a front face thickness is greater than or equal to a back face thickness.
10. A laminated golf club head face in accordance with claim 9, wherein the front face thickness is between 1.2 millimeters and 2.5 millimeters and the back face thickness is between 0.7 millimeters and 2.5 millimeters.
11. A laminated golf club head face in accordance with claim 10, wherein the front face thickness is between 2.2 millimeters and 2.5 millimeters and the back face thickness is between 1.0 millimeters and 1.2 millimeters.

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12. A laminated golf club head face in accordance with claim 1, wherein the back face is circular.

13. A laminated golf club head face in accordance with claim 1, wherein the back face is a polygon.

14. A laminated golf club head face in accordance with claim 1, wherein the back face is elliptical.

15. A laminated golf club head face in accordance with claim 1, wherein the back face is a square.

16. A laminated golf club head face in accordance with claim 1, wherein a tensile strength of the back face is greater than or equal to a tensile strength of the front face and a plasticity of the front face is greater than or equal to a plasticity of the back face.

17. A laminated golf club head face in accordance with claim 1, wherein an area of the back face is between 40 percent and 90 percent of an area of the front face.

18. A laminated golf club head face in accordance with claim 17, wherein the area of the back face is between 70 percent and 90 percent of the area of the front face.

19. A laminated golf club head face in accordance with claim 1, further comprising another back face secured to the back face.

20. A golf club head comprising:
a golf club head body; and
a laminated golf club head face comprising:
a front face attached to the golf club head body; and
a back face welded to the front face.

21. A laminated golf club head in accordance with claim 20, wherein the back face is welded to the front face along the periphery of the back face.

22. A laminated golf club head face in accordance with claim 20, wherein the back face comprises a plurality of ridges extending away from the front face.

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23. A laminated golf club head in accordance with claim 20, wherein the back face is smaller than the front face.

24. A laminated golf club head in accordance with claim 20, wherein the back face contacts the front face only along a periphery of the back face.

25. A laminated golf club head in accordance with claim 24, wherein a center of the back face is separated from the front face by a distance between one to three millimeters.

26. A laminated golf club head in accordance with claim 25, wherein the distance is approximately 2 millimeters.

27. A laminated golf club head in accordance with claim 24, wherein the back face is sealed to the front face around the periphery of the back face and a sealed region between front face and the back face contains a gas.

28. A laminated golf club head in accordance with claim 20, wherein a front face thickness is greater than or equal to a back face thickness.

29. A laminated golf club head in accordance with claim 28, wherein the front face thickness is between 1.2 millimeters and 2.5 millimeters and the back face thickness is between 0.7 millimeters and 2.5 millimeters.

30. A laminated golf club head in accordance with claim 29, wherein the front face thickness is between 2.2 millimeters and 2.5 millimeters and the back face thickness is between 1.0 millimeters and 1.2 millimeters.

31. A laminated golf club head in accordance with claim 20, wherein the back face is circular.

32. A laminated golf club head in accordance with claim 20, wherein the back face is a polygon.

33. A laminated golf club head in accordance with claim 20, wherein the back face is elliptical.

34. A laminated golf club head in accordance with claim 20, wherein the back face is a square.

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35. A laminated golf club head in accordance with claim 20, wherein a tensile strength of the back face is greater than or equal to a tensile strength of the front face and a plasticity of the front face is greater than or equal to a plasticity of the back face.

36. A laminated golf club head in accordance with claim 20, wherein an area of the back face is between 40 percent and 90 percent of an area of the front face.

37. A laminated golf club head in accordance with claim 36, wherein the area of the back face is between 70 percent and 90 percent of the area of the front face.

38. A laminated golf club head in accordance with claim 20, further comprising another back face secured to the back face.

39. A method of manufacturing a laminated golf club face, the method comprising:
welding a back face to a front face.

40. A method in accordance with claim 39, wherein the welding comprises welding the back face to the front along a periphery of the back face.

41. A method in accordance with claim 39, further comprising:
forming the front face from sheet metal; and
forming the back face from sheet metal to include a plurality of ridges
extending away from the front face.

42. A method in accordance with claim 41, wherein the forming the back face comprises forming the back face is smaller than the front face.

43. A method in accordance with claim 39, further comprising:
spot welding the back face to the front face at a plurality of points while
the back face is positioned within a center of an area of the front face.

44. A method in accordance with claim 39, wherein the welding comprises:
welding the back face to the front face along a periphery of the back face sealing
the back face to the front face except for an opening;

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injecting a gas into the opening to pressurize a sealed region between the front face and the back face; and

completing the weld along the periphery of the back face.

45. A method in accordance with claim 44, wherein the injecting comprises injecting the gas into the opening to pressurize the sealed region to pressure of 3 to 5 atmospheres.

46. A method in accordance with claim 39, further comprising:

vacuum heat treating the front face such that a tensile strength of the back face is greater than or equal to a tensile strength of the front face and a plasticity of the front face is greater than or equal to a plasticity of the back face

47. A method in accordance with claim 39, further comprising:

vacuum heat treating the back face such that a tensile strength of the back face is greater than or equal to a tensile strength of the front face and a plasticity of the front face is greater than or equal to a plasticity of the back face

48. A method in accordance with claim 39, further comprising securing another back face to the back face.